UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PUBLIC ROADS
DIVISION OF AGRICULTURAL ENGINEERING

S. H. McCRORY, CHIEF

WASHINGTON, D. C., JANUARY 20, 1930

THE FOLLOWING ARE QUARTERLY REQUISITION NUMBERS FOR THE THIRD QUARTER OF THE FISCAL YEAR 1930: GASOLINE, OIL AND GREASE, A.E. 190. REPAIR AND UPKEEP TO MOTOR VEHICLES AND TRACTORS, INCLUDING GARAGE RENT, A.E. 191. REPAIR TO ENGINEERING EQUIPMENT AND OFFICE EQUIPMENT, A.E. 192. MISCELLANEOUS FIELD ENGINEERING EQUIPMENT AND SUPPLIES, A.E. 193. THE APPROPRIATE NUMBER SHOULD BE PLACED ON EACH VOUCHER SUBMITTED.

MR. McCRORY RECENTLY INSPECTED THE WORK IN SOIL EROSION EXPERIMENTS BEING CARRIED ON BY F. O. BARTEL AT RALEIGH, N.C. WHILE THERE HE DISCUSSED FUTURE COOPERATIVE WORK WITH MR. GRAHAM OF THE NORTH CAROLINA DEPARTMENT OF AGRICULTURE AND WITH OFFICIALS OF THE NORTH CAROLINA AGRICULTURAL COLLEGE.

THE AGRICULTURAL APPROPRIATION BILL HAS PASSED THE HOUSE WITH NO CHANGES IN THAT PORTION RELATING TO AGRICULTURAL ENGINEERING OTHER THAN NOTED IN THE LAST NEWS LETTER.

L. A. JONES WILL DELIVER ADDRESSES TO STUDENTS OF PURDUE UNIVERSITY, INDIANA, AND THE OHIO STATE UNIVERSITY AT COLUMBUS ON THE DESIGN AND CONSTRUCTION OF FARM DRAINAGE SYSTEMS. THESE ADDRESSES ARE BEING MADE IN CONNECTION WITH THE EXTENSION WORK OF THESE INSTITUTIONS.

W. W. McLAUGHLIN ATTENDED THE MEETING OF THE LAND RECLAMATION DIVISION OF THE AMERICAN SOCIETY OF AGRICULTURAL ENGINEERS AT KANSAS CITY, MO., DECEMBER 30 AND 31. FROM THERE HE PROCEEDED TO WASHINGTON, D. C. TO PLAN THE PROGRAM OF WORK FOR NEXT FISCAL YEAR, LEAVING WASHINGTON JANUARY 8 TO RETURN TO BERKELEY BY WAY OF THE SOUTHERN STATES.

WELLS A. HUTCHINS REPORTS THAT THE RESULTS OF THE CANVASS OF IRRIGATION DISTRICTS DURING THE PAST YEAR, MADE FOR THE PURPOSE OF REVISING DEPARTMENT BULLETIN NO. 1177, SHOW THAT 197 NEW DISTRICTS HAVE BEEN ORGANIZED DURING THE PERIOD 1922-1928, INCLUSIVE. FORTY-ONE OF THESE ARE IN

California, 30 in Washington, 28 in Idaho, 27 in Texas, 24 in Arizona, and the other 47 in nine other States. Sixty of the new districts were formed entirely for new development, 17 principally for new development, and 120 principally for supplemental development or acquisition of existing irrigation systems.

At the close of 1928, there were approximately 10,300,000 acres in active irrigation districts, of which more than 4,100,000 acres were irrigated in 1928 from district-operated irrigation systems. Active districts in California included about 3,100,000 irrigable acres, with slightly less than one-half actually irrigated in 1928; followed by Idaho and Texas with about 1,400,000 acres each in active districts, and with irrigated areas of about 620,000 and 370,000 acres, respectively.

Bonds sold by irrigation districts in the United States during the 42 years ending with 1928 aggregate nearly 225 million dollars. Of this amount 71.1 per cent have been paid in full to date, while 10.5 per cent are now overdue and are expected to be compromised at a loss to bondholders. Most of the other 18.4 per cent sold have been compromised, defaulted, or declared illegal. The percentage of bonds paid in full to date is about the same as in 1921; for while material defaults have developed since then, the volume of bonds sold since 1921 and in good standing is much larger than the delinquent issues.

Bonds outstanding at the end of 1928 totaled about 185 million dollars. In round numbers, bonds of California districts outstanding totaled 97 million dollars, followed by Texas with 20 1/2 million dollars and Arizona, Idaho, Oregon, and Washington with 10 to 12 1/2 million dollars each.

George R. Boyd has compiled the following data regarding the overhead costs of 74 drainage districts in Northern Iowa. These overhead costs include court, printing, legal and engineering costs.

Number of Districts	Average Construction Cost	Overhead Cost
	Dollars	Per cent
23	2,702.72	25.2
17	7,435.76	13.8
15	13,069.23	11.2
12	24,866.58	9.6
3	38,289.46	6.7
1	70,081.37	8.5
1	366,306.32	9.4
1	783,234.16	8.6

Forty-five districts completed prior to January 1, 1921 showed an average overhead cost of 9.1 per cent while 28 districts completed since that date showed an average overhead of 13.9 per cent. One of the districts was entirely an open ditch job, four were open ditch and tile and the remainder were all tile.

M. R. LEWIS ATTENDED THE KANSAS CITY MEETING OF THE A.S.A.E., GOING FROM THERE TO ARIZONA FOR THE PURPOSE OF MAKING SOME SPECIAL INVESTIGATIONS IN CONNECTION WITH THE ST. DAVID IRRIGATION PROJECT, AND TO STUDY PUMPING FOR IRRIGATION AND DRAINAGE IN THE SALT RIVER VALLEY, RETURNING BY WAY OF SOUTHERN CALIFORNIA.

R. G. HEMPHILL WAS ELECTED VICE-PRESIDENT OF THE SAN ANTONIO FEDERAL BUSINESS ASSOCIATION AT THEIR DECEMBER MEETING.

ENGINEERING WORK ON THE MIGRATORY BIRD REFUGE BY THE BUREAU OF BIOLOGICAL SURVEY, IN UTAH, WAS ABLE TO CONTINUE THROUGHOUT DECEMBER, DUE TO THE MILD WINTER. THE PRESENT CONTRACT WILL PROBABLY BE COMPLETED A SEASON EARLIER THAN PRESCRIBED IN THE SPECIFICATIONS.

AT A MEETING HELD IN THE BERKELEY OFFICE UNDER THE AUSPICES OF THE IRRIGATION DIVISION OF THE AMERICAN SOCIETY OF CIVIL ENGINEERS, IT WAS DECIDED TO MAKE AN INTENSIVE STUDY OF THE CONSERVATION OF WATER BY A MORE ECONOMICAL USE OF WATERSHEDS. A TEMPORARY COMMITTEE WAS APPOINTED TO CONSIDER THE ORGANIZATION OF A PERMANENT COMMITTEE TO ACT AS A CLEARING HOUSE FOR RESEARCH AND INFORMATION CONCERNING MOUNTAIN WATERSHED IMPROVEMENT POSSIBILITIES. H. F. BLANEY ACTED AS SECRETARY FOR THIS CONFERENCE.

R. B. GRAY LEFT JANUARY 14 FOR ROCKFORD, ILL. AND RACINE, WISC., TO CONFER WITH OFFICIALS OF THE J. I. CASE COMPANY ON FARM MACHINERY PROBLEMS INCLUDING MACHINERY FOR CORN BORER CONTROL. MR. GRAY WAS IN THE WASHINGTON OFFICE RECENTLY PLANNING HIS WORK FOR THE COMING YEAR.

F. D. FULTON, ASSISTANT AGRICULTURAL ENGINEER REPORTED FOR DUTY AT TOLEDO, JANUARY 14, AFTER A FEW WEEKS ABSENCE DUE TO INJURIES RECEIVED IN AN AUTOMOBILE ACCIDENT.

AN EXPERIMENTAL PULLED-TYPE BURNER BUILT AT TOLEDO FOR COMBATING THE CORN BORER WAS SHIPPED ON DECEMBER 21, TO CALIFORNIA. THERE IT IS TO BE TRIED OUT AS A MEANS OF CONTROLLING THE PEA APHID WHICH IS CAUSING MUCH DAMAGE TO THE ALFALFA CROP. O. J. HEDDEN, ASSISTANT AGRICULTURAL ENGINEER, WHO HAS BEEN ACTIVELY ASSOCIATED WITH THE BURNER WORK AT TOLEDO IS TO LEAVE SHORTLY FOR TWO MONTHS TO SUPERVISE THE ENGINEERING PHASES OF THE WORK IN CALIFORNIA. THIS WORK IS IN COOPERATION WITH THE BUREAU OF ENTOMOLOGY.

COOPERATIVE WORK ON CORN BORER CONTROL IS BEING PLANNED IN CONNECTION WITH THE PLANT QUARANTINE & CONTROL ADMINISTRATION AND THE BUREAU OF ENTOMOLOGY ON THE RECENTLY ACQUIRED BERKELEY DEVELOPMENT AND DEMONSTRATION FARM IN MASSACHUSETTS.

J. T. BOWEN HAS DESIGNED A LAYOUT FOR AN ELECTRIC SYSTEM FOR THE DAIRY AND LIVESTOCK EXPERIMENT STATION AT LEWISBURG, TENN.

GEO. A. MITCHELL WAS IN THE WASHINGTON OFFICE DURING THE LATTER PART OF DECEMBER IN CONNECTION WITH HIS WORK ON THE SEWAGE IRRIGATION PROJECT.

GEORGE R. BOYD IS IN WASHINGTON FOR THE PURPOSE OF TAKING UP WITH THE WAR DEPARTMENT THE MATTER OF THE APPRAISAL OF LARGE AREAS OF LAND IN THE LOWER MISSISSIPPI VALLEY.

VERY KEEN INTEREST WAS SHOWN IN THE PLANS FOR FARM STRUCTURES AND EQUIPMENT PREPARED BY THE DIVISION, WHICH WERE EXHIBITED AT THE INTERNATIONAL LIVESTOCK EXPOSITION, CHICAGO, DECEMBER 6. NINE HUNDRED AND FIFTY FARMERS AND AGRICULTURAL WORKERS REQUESTED THAT DRAWINGS TOTALING 3,200, BE SENT THEM.

F. E. STAEBNER MADE A TRIP TO LEESBURG, VA. TO INVESTIGATE THE POSSIBILITY OF ESTABLISHING AN EXPERIMENTAL TILE DRAINAGE FIELD LABORATORY IN THAT VICINITY.

M. O. BETTS IS PREPARING DRAWINGS FOR A ZOOLOGICAL LABORATORY AT BELTSVILLE, MD. FOR ANIMAL HUSBANDRY; ALSO DRAWINGS FOR A BULB AND NURSERY STORAGE AT THE ARLINGTON FARM FOR PLANT INDUSTRY.

M. A. R. KELLEY RECENTLY ADDRESSED A GROUP OF MANUFACTURERS OF METAL GRAIN BINS AT KANSAS CITY, IN WHICH HE GAVE SOME OF THE RESULTS OF HIS STUDIES OF GRAIN STORAGES.

A. H. SENNER IS DESIGNING, FOR DR. E.W. BRANDES OF PLANT INDUSTRY, AN AUTOMATIC STERILIZER IN WHICH TEMPERATURE, PRESSURE AND WATER FEED ARE AUTOMATICALLY CONTROLLED.

THE CLASSIFIED LIST OF FARM BUILDING AND EQUIPMENT PLANS PREPARED BY STATE AGRICULTURAL COLLEGES AND THIS DIVISION TO WHICH REFERENCE WAS MADE IN A RECENT NEWS LETTER IS NOW BEING MAILED OUT TO THE VARIOUS AGRICULTURAL ENGINEERING DEPARTMENTS OF STATE STATIONS. THIS LIST WAS COMPILED BY T. A. H. MILLER.

THE FOLLOWING MANUSCRIPTS HAVE BEEN SUBMITTED IN THE LAST TWO MONTHS FOR PUBLICATION BY THE DEPARTMENT:

"IRRIGATION REQUIREMENTS OF THE ARID AND SEMI-ARID LANDS OF THE SOUTHWEST" BY SAMUEL FORTIER AND A. A. YOUNG.

"COMMERCIAL IRRIGATION COMPANIES" BY WELLS A. HUTCHINS.

."FACTORS AFFECTING THE MECHANICAL APPLICATION OF FERTILIZERS TO THE SOIL", BY A. L. MEHRING AND G. A. CUMINGS.

"EROSION AND SILTING OF DREDGED DRAINAGE DITCHES," BY C.E. RAMSER.

"REPORT OF TESTS OF VENTILATION SYSTEMS OF FARM BARNS" BY M.A.R. KELLEY.

"IRRIGATION REQUIREMENTS OF THE ARID AND SEMI ARID LANDS OF THE COLUMBIA RIVER BASIN" BY SAMUEL FORTIER AND A. A. YOUNG.

"ECONOMIC STATUS OF DRAINAGE DISTRICTS IN THE SOUTH" BY BY R. D. MARSDEN AND R. P. TEELE.

"IRRIGATION OF ALFALFA"(REVISION) BY SAMUEL FORTIER.

EMPLOYEES OF THE DIVISION HAVE BEEN INVOLVED IN ONLY A FEW AUTOMOBILE ACCIDENTS DURING THE PAST YEAR AND THE DIVISION HAS MADE A GOOD RECORD FOR SAFE DRIVING IN 1929. WE SHOULD ALL STRIVE TO MAKE AN EVEN BETTER RECORD IN 1930. BE SURE AND ALWAYS KEEP BRAKES AND LIGHTS IN GOOD ORDER. DRIVE SAFELY!